A Ghost in a Host! – An Odontome with Unusual Presentation

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Odontomas are hamartomas, being of two types: Compound and complex and are nonaggressive hamartomatous developmental malformations or tumors of odontogenic origin, which consists of enamel, dentin, cementum and pulpal tissue. They are usually asymptomatic and diagnosed on routine radiological studies in the second and third decades of life. Compound variety is more often found in anterior maxilla; complex occurs in molar areas of either jaw. Mean age of occurrence is 12-16 years. Radiographically, they present as radiopacities surrounded by a radiolucent rim in complex variety and tooth like structures of different size and shape surrounded by radiolucency in compound variety. Here, we have discussed a rare case of erupting complex odontoma associated with an impacted mandibular third molar.

Keywords: Complex odontome, Erupted, Mandible, Odontogenic tumor

INTRODUCTION

Odontomas are nonaggressive hamartomatous developmental malformations or tumors of odontogenic origin, which consists of enamel, dentin, cementum and pulpal tissue. According to the latest classification of the World Health Organization (2005), two types of odontomacan be found: Complex odontoma and compound odontoma, the latter being twice as common as the former. These tumors are characterized by slow growth and constitute 22% of all odontogenic tumors. Odontomas erupting into the oral cavity are rare. The first case was published in 1980, and since then only 17 cases have been reported in the literature. 8 of the 17 cases were complex composite odontomas; the rest were compound odontomas. A compound odontoma forms an agglomeration of small structures resembling teeth, common in anterior maxilla; a complex odontoma forms an irregular mass in a disorderly pattern, common in the mandible in first and second molar areas. Odontomas are generally asymptomatic; usually remain small, rarely exceeding the diameter of the tooth. Occasionally it does become large and may produce expansion of the bone with consequent facial asymmetry. This is particularly true if dentigerous cyst develops around it. For this reason, the clinician should secure radiographs of the area when tooth eruption has been delayed to prevent further complications. Here, the author has discussed a rare case of erupting complex odontoma associated with impacted mandibular third molar.

CASE REPORT

A 25-year-old female reported with a swelling in lower right jaw since 9 months. She also complained of pain and pus discharge intraorally since 1 week. There was no history of fever or numbness in the same region. Past medical, family and personal history were non-contributory. Extra-oral examination revealed facial asymmetry due to the presence of diffuse swelling on the right side of lower one-third of the face. Swelling was warm, firm and tendered on palpation (Figure 1). Intraoral examination revealed clinically missing 48, buccal and lingual cortical plate expansion and indentation on the alveolar ridge mucosa due to supra erupted 18. A hard mass was felt on probing beneath the alveolar mucosa, and a shallow periodontal pocket distal to 47 was noted. Provisional diagnosis of infected dentigerous cyst was made (Figure 2). Intraoral periapical and mandibular true occlusal radiographs (Figures 3 and 4) showed a well-defined radio opaque mass distal to 47. Panoramic radiograph (Figure 5) showed a well-defined large radiopaque mass coronal to impacted 48. The density of the mass was equal to that of the dental tissue and the mass was surrounded by radiolucent halo suggestive of a capsule. Incisinal biopsy revealed encapsulated lesion and histopathological findings...
showed fibro cellular connective tissue with dense chronic inflammatory cells. Vascularity in the form of many young vessels and well-formed blood vessels consisted of sheets of dentin, enamel, cementum and pulp arranged in a haphazard fashion with a tissue consisting of dentin matrix the histopathological features were suggestive of complex odontome (Figure 6). Final diagnosis of infected complex odontoma was made. Chronic osteomyelitis, fibro-osseous lesions, calcifying epithelial odontogenic tumor, ameloblastic fibro-odontoma, adenomatoid odontogenic tumor were made as the differential diagnosis. The lesion was surgically excised.

Figure 1: Extra oral view showing diffused swelling on the right facial region

Figure 2: Intraoral view showing inflamed alveolar ridge mucosa and buccal expansion in 48 region

Figure 3: Intraoral periapical radiograph of 48 region showing a well-defined radiopaque mass distal to 47

Figure 4: Mandibular true occlusal radiograph showed well defined radio opaque mass distal to 47, mesially surrounded by radiolucent rim

Figure 5: Panoramic radiograph showing well defined large radiopaque mass coronal to impacted 48

Figure 6: Photomicrograph showing lesion consists of sheets of dentin, enamel, cementum and pulp arranged in haphazard fashion
DISCUSSION

The odontoma is the most common benign odontogenic tumor or hamartoma containing all the various component tissues of teeth. Paul Broca (1867) coined the term odontoma. Gabel et al. (1914) grouped odontomes according to their developmental origin into epithelial, composite (epithelial and mesodermal) and connective tissue. Thomas and Goldman (1946) classified odontoma as geminated composite odontoma, Compound composite odontoma, complex composite odontoma, dilated odontoma and cystic odontoma.1-7

Though the etiology is unknown, it is believed that factors such as trauma to the primary dentition, local infection, hereditary anomalies (Gardner’s syndrome, Hermann’s syndrome), odontoblastic hyperactivity, or alterations of genetic components that are responsible for controlling tooth development may lead to the production of such lesions.3 Clinically odontoma can be intra-osseous or extra-osseous, either complex or compound in nature.7 Compound odontomas are more common in anterior maxilla having a predilection of 62% for the incisor canine region but no sex bias, whereas the complex odontomas are more common in mandible and approximately 70% of these tumors are located in the first and second molar areas with 68% of complex odontoma occurring in females.10 They are usually detected during a routine examination in the second and third decades of the life, and the mean age at the time of diagnosis is 14 years. The case presented here is in accordance with the prevalence of the age, gender, and site of occurrence as mentioned in previous studies.

Disturbance in the eruption of permanent tooth, retention of primary teeth, or abnormalities in tooth position, such as tipping or displacement of adjacent teeth is the most common complaint.11-14 In a study with 39 cases in Japanese children, the most frequent causes of odontoma discovered were delayed tooth eruption (49%), retention of the primary teeth (28%), incidental finding on radiographs (20%) and swellings of the jaw (3%).15

Odontomes have been classified on the basis of radiological features and degree of calcification three developmental stages has been identified. The first stage is characterized by radiolucency due to the absence of dental tissue calcification, second or intermediate stage presents partial calcification and the third or classically radiopaque stage exhibits significant calcification surrounded by a radiolucent halo.16,17 Compound odontoma is depicted as an irregular radiopaque image with variations in contour and size, composed of multiple radio-opacities corresponding to mini teeth. Irregular single or multiple radiopaque masses are seen in complex odontoma; radio-opacity is not specific because of its peripheral fibrous connective tissue capsule, which is really the follicle or periodontal ligament of the abnormal dental structure.18-20 Conservative surgical enucleation is considered to be the treatment of choice in most cases of complex odontoma.

CONCLUSION

Though odontomas are the most common benign odontogenic jaw tumors, erupting complex odontomas are rare. Majority of odontoma are asymptomatic and are discovered on routine radiographic examination. Odontomas that erupt into the oral cavity and become an infected pose moderately serious condition. The dentist should be familiar with both common and unusual appearances of odontomas for proper diagnosis and management.

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